

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. *(currently amended)* A method for distributing Quality of Service (QoS) information among network entities to flexibly promote fair congestion processing, comprising:

monitoring a congestion level of at least one data stream that is processed by a first network entity;

performing a QoS action at the first network entity that limits consumption of resources of the first network entity by the at least one data stream ~~on the at least one data stream in response to determining that the congestion level of the at least one data stream satisfies a congestion threshold;~~ and

communicating the QoS action to a second network entity that subsequently processes the at least one data stream, wherein the second network entity ~~alters its congestion processing~~ increases a relative precedence for limiting consumption of resources of the second network entity by other data streams processed by the second network entity in order to limit the effect of the QoS action taken on the at least one data stream by the first network entity.

2. *(original)* The method according to Claim 1, wherein monitoring the congestion level comprises:

receiving data streams from a plurality of network entities;

storing the data streams within a buffering system; and

monitoring a storage level of the buffering system.

3. *(original)* The method according to Claim 2, wherein performing the QoS action comprises recording QoS actions taken by the plurality of network entities.

4. *(original)* The method according to Claim 3, wherein performing the QoS action further comprises:

retrieving the recorded QoS actions; and

prioritizing the recorded QoS actions into an order starting with the least most recently modified data stream to the most recently modified data stream.

5. *(original)* The method according to Claim 4, wherein performing the QoS action further comprises at least one of dropping data packets, modifying data packets and delaying data packets from the least most recently modified data stream.

6. *(original)* The method according to Claim 1, wherein communicating the QoS action comprises providing signalling information indicative of the QoS action within the data stream.

7. *(original)* The method according to Claim 1, wherein communicating the QoS action comprises providing out-of-band signalling information indicative of the QoS action.

8. *(currently amended)* A system for distributing Quality of Service (QoS) actions in accordance with precedence priorities to promote fair congestion processing within a network, the system comprising:

a network element coupled to a boundary of the network;

a first forwarding terminal coupled to exchange a plurality of data streams with the network element and adapted to implement QoS actions that limit consumption of resources of the first forwarding terminal by on a first portion of the plurality of data streams, the first portion receiving a first precedence priority in response to the QoS actions; and

a second forwarding terminal coupled to exchange the plurality of data streams with the first forwarding terminal and coupled to receive signalling indicative of the QoS actions implemented by the first forwarding terminal, wherein QoS actions that limit consumption of resources of ~~taken by~~ the second forwarding terminal are performed upon a second portion of the plurality of data streams having a second precedence priority equal to or

higher than the first precedence priority in order to limit the effect of the QoS action taken on the first portion of data streams by the first forwarding terminal.

9. *(original)* The system according to Claim 8, wherein the first forwarding terminal comprises:

a routing unit coupled to receive the plurality of data streams from the network element, the plurality of data streams containing signalling indicative of prior QoS actions;

a buffering unit adapted to temporarily store the plurality of data streams received from the routing unit;

a congestion control unit adapted to monitor a storage level of the buffering unit;
and

a QoS unit adapted to perform the QoS actions, wherein the QoS actions taken by the QoS unit are adapted to reduce the storage level of the buffering unit by dropping, modifying or delaying packets of data from the first portion of the plurality of data streams.

10. *(original)* The system according to Claim 9, wherein the first forwarding terminal further comprises a marking unit adapted to mark the first portion of the data streams with the first precedence priority.

11. *(original)* The system according to Claim 8, wherein the second forwarding terminal comprises:

a routing unit coupled to receive the plurality of data streams from the first forwarding terminal, the plurality of data streams containing signalling indicative of Quality of Service actions taken by the first forwarding terminal;

a buffering unit adapted to temporarily store the plurality of data streams received from the routing unit;

a congestion control unit adapted to monitor a storage level of the buffering unit;
and

a Quality of Service (QoS) unit adapted to perform the QoS actions, wherein the QoS actions taken by the QoS unit are adapted to reduce the storage level of the buffering

unit by dropping, modifying or delaying packets of data from the plurality of data streams whose signalling indicates a lack of QoS actions taken by the first forwarding terminal.

12. *(original)* The system according to Claim 11, wherein the second forwarding terminal further comprises a marking unit adapted to mark the second portion of the data streams with a precedence priority indicative of the QoS actions taken by the second forwarding terminal.

13. *(currently amended)* A communication device operable on a network, comprising:
a routing unit coupled to receive a plurality of data streams from the network, the plurality of data streams containing signalling indicative of prior Quality of Service (QoS) actions taken on the plurality of data streams at network nodes that previously processed the data streams, the QoS actions taken for purposes of limiting consumption of resources by the data streams at the network nodes;

a buffering unit adapted to temporarily store the plurality of data streams received from the routing unit;

a congestion control unit adapted to monitor a storage level of the buffering unit;
and

a QoS unit adapted to perform QoS actions on the plurality of data streams, wherein the QoS actions taken by the QoS unit are adapted to reduce the storage level of the buffering unit by acting on packets of data from the plurality of data streams whose signalling indicates a lack of prior QoS actions in order to limit the effect of the QoS actions previously taken by the network nodes.

14. *(original)* The communication device according to Claim 13, wherein the routing unit bypasses the QoS unit if the storage level of the buffering unit is below a storage threshold.

15. *(original)* The communication device according to Claim 14, wherein the routing unit engages the QoS unit if the storage level of the buffering unit is above a storage threshold.

16. *(original)* The communication device according to Claim 15, wherein the QoS unit comprises a QoS action unit coupled to receive the plurality of data streams when the storage threshold is exceeded and adapted to drop, modify or delay the data packets from the plurality of data streams indicating the lack of prior QoS actions.

17. *(original)* The communication device according to Claim 16, wherein the QoS unit further comprises a QoS action history unit coupled to the QoS action unit and adapted to maintain a history or prior QoS actions taken on the plurality of data streams.

18. *(original)* The communication device according to Claim 17, wherein the QoS action history unit is further adapted to maintain a history of QoS actions taken on the plurality of data streams by the QoS action unit.

19. *(original)* The communication device according to Claim 16, wherein the QoS unit further comprises a packet marking unit coupled to the QoS action unit and adapted to mark the plurality of data streams whose data packets were dropped, modified or delayed by the QoS action unit.

20. *(currently amended)* A computer-readable medium having instructions stored thereon which are executable by a computing system for applying Quality of Service (QoS) actions on data streams exchanged between at least two applications over a network by performing steps comprising:

receiving data streams from the at least two applications, the data streams including signalling information indicative of prior QoS actions at network nodes that previously processed the data streams, the QoS actions taken for purposes of limiting consumption of resources at the network nodes;

applying a QoS action on one of the at least two data streams in response to detecting a need to perform the QoS action, wherein the application of the QoS action performs steps comprising:

retrieving a history of prior QoS actions taken on each of the at least two data streams;

prioritizing the history of prior QoS actions, wherein prior QoS actions taken most recently receive a low priority;

selecting one of the at least two data streams having a priority level equal to or greater than the low priority; and

applying the QoS action to the selected data stream in order to limit the effect of the QoS actions taken on any of the at least two data streams having low priorities.